

```

1  GTCCCTCCACCATGCACCTCGCTGGGCTTCTTCTCTGTGGCGTGTCTCTCTGCTCGCCGCTG
   +-----+-----+-----+-----+-----+-----+-----+-----+
   CAGGAAGGTGGTACGTGAGCGACCCGGAAGAAGAGACACCGCACAAAGAGACGAGCGGGGAC
   M H S L G F F S V A C S L L A A A - 60
   +-----+-----+-----+-----+-----+-----+-----+-----+
61  CGCTGCTCCCGGGTCTCGGAGGGGCCCGCGCCGCGCGCTTCGAGTCCGGACTCG
   +-----+-----+-----+-----+-----+-----+-----+-----+
   GCGACGAGGGCCCAAGAGCGCTCCGCGGGCGGGCGGCGGAAGCTCAGGCCTGAGC
   L L P G P R E A P A A A A A F E S G L D - 120
   +-----+-----+-----+-----+-----+-----+-----+-----+
121 ACCTCTCGGACGGGAGCCCGACGCGGGGAGGCCAGCGCTTATGCAAGCAAAGATCTGG
   +-----+-----+-----+-----+-----+-----+-----+-----+
   TGGAGAGCCTGCGCCTCGGCTGCGCGCTCCGCTGCCGAATACGTTCTCTAGACC
   L S D A E P D A G E A T A Y A S K D L E - 180
   +-----+-----+-----+-----+-----+-----+-----+-----+
181 AGGAGCAGTTACGGTCTCTGTCCAGTGTAGATGAATCACTCATGACTGTACTCTACCCAGAAT
   +-----+-----+-----+-----+-----+-----+-----+-----+
   TCCTCGTCAATGCCAGACACAGGTACATCTACTTGAGTACTGACATGAGATGGGTCTTA
   E Q L R S V S S V D E L M T V L Y P E Y - 240
   +-----+-----+-----+-----+-----+-----+-----+-----+
241 ATTGGAATAATGACAAGTGTCAAGTAAGGAAGGAGGCTGGCAACATAACAGAGAACAGG
   +-----+-----+-----+-----+-----+-----+-----+-----+
   TAACCTTTTACATGTTACAGTCGATTCCTTCTCCGACCGTGTATTGTCCTCTTGTC
   W K M Y K C Q L R K G G W Q H N R E Q A - 300
   +-----+-----+-----+-----+-----+-----+-----+-----+
   CCAACCTCAACTCAAGACAGAAGAGACTATAAAATTGCTGCAGCACATTATAATACAG

```

MATCH WITH FIG. 1B

FIG. 1A

MATCH WITH FIG. 1B

661 TTTACAGACAAGTTCATTCCATTATTAGACGTTCCCTGCCAGCAACACTACCACAGTGTCT
 720 AAATGTCTGTTCGAAGTAAGTAATAATCTCAAGGGACGGTCTGTTGATGGTGTACAG
 Y R Q V H S I I R S L P A T L P Q C Q -
 AGGCAGCGAACAAAGACCTGCCCCACCAATTACATGTGGAATAATCACATCTGCAGATGCC
 781 TCCGTGCGTGTCTCGACGGGTGGTTAAATGTACACCTATTAGTGTAGACGTCTACGG
 A A N K T C P T N Y M W N N H I C R C L -
 TGGCTCAGGAAGATTTTATGTTTCTCGGATGCTGGAGATGACTCAACAGATGGATTCC
 840 ACCGAGTCCCTCTTAAATAACAAAAGGAGCCTACGACCTCTACTGAGTTGTCTACCTAAGG
 A Q E D F M F S S D A G D D S T D G F H -
 ATGACATCTGTGGACCAACAAGGAGCTGGATGAAGAGACCTGTCTGTTCTGCAGAG
 841 TACTGTAGACACCTGGTTTGTCTCGACCTACTTCTCTGAGTCACACAGACGTCTC
 D I C G P N K E L D E E T C C Q C V C R A -
 CGGGGCTTCGGCCTGCGAGTGTGGACCCCAAGAACTAGACAGAAACTCATGCCAGT
 901 GCCCCGAAGCCGGACGGTCGACACACCTGGGGTGTCTTGTGATCTGTTCTTGTAGTACGGTCA
 G L R P A S C G P H K E L D R N S C Q C -
 GTGTCTGTAAACAACAACCTTCCCGAGCCCAATGTGGGGCCCAACCGAGAATTTGATGAAA
 961 CACAGACATTTTGTGTAAGAGGGTCTGTTACACCCCGGTGGTCTCTTAAACTACTTT
 MATCH WITH FIG. 1D

FIG. 1C

MATCH WITH FIG. 1C

	V	C	K	N	K	L	F	P	S	Q	C	G	A	N	R	E	F	D	E	N	-	
1021	AC	CA	TGCC	AG	TG	TAT	GT	ATA	AGA	AC	CTG	CC	CC	CA	GA	ATCA	AC	CC	CTTA	ATC	CTGGAA	1080
	TG	TG	TAC	GGT	CA	CA	TA	CA	TAT	TTT	CTT	TG	GAC	GGG	GTCT	TTAG	TGG	GAT	TTAG	GAC	CTT	
	T	C	Q	C	V	C	K	R	T	C	P	R	N	Q	P	L	N	P	G	K	-	
1081	AA	TG	TGC	CTGT	GA	ATG	TAC	AGAA	GTCC	AC	AGA	ATG	CTT	GT	TAA	AGGA	AGAA	AGT	TCC		1140	
	TT	AC	AGG	AC	ACT	TAC	TG	CTTT	CA	GGT	GTCT	TTAC	GA	ACA	ATTT	TC	CTT	CTT	CTCA	AGG		
	C	A	C	E	C	T	E	S	P	Q	K	C	L	L	K	G	K	K	F	H	-	
1141	ACC	ACCA	AA	CA	TG	CAG	CTG	TTAC	AG	ACG	GGCC	ATGT	AC	GA	ACCG	CCAG	AGG	CTT	GT	GAGC	1200	
	TG	GT	GGT	TTG	TAC	GTCA	GCAC	AAAT	GTCT	GCC	GGTAC	ATGT	CTGG	CGGT	ACAT	GTCT	GGCG	GTCT	TCC	GAAC	ACTCG	
	H	Q	T	C	S	C	Y	R	R	P	C	T	N	R	Q	K	A	C	E	P	-	
1201	CAG	GAT	TTT	CA	TAT	AG	TGA	AG	AGT	GTG	TG	TG	TG	TC	CTCAT	TAT	TGG	CA	AA	GACC	AC	
	GT	CT	TAA	AG	TAT	AT	CA	CTT	CTT	CA	CA	CA	CA	CA	CA	AGG	AG	AGT	ATA	AC	CGTTT	
	G	F	S	Y	S	E	E	V	C	R	C	V	P	S	Y	W	Q	R	P	Q	-	
	AA	TG	AG	CT	AA	GT	GT	ACT	GT	TTT	TCC	AG	TTCA	TG	AT	CTG	AT	TTT	CT	AT	TAT	
																					TG	

MATCH WITH FIG. 1E

FIG. 1D

MATCH WITH FIG. 1D

```

1261  +-----+-----+-----+-----+-----+-----+
      TTTACTCGATTCTTACATGACAAAAGTCAAGTAGCTAAAAGATAATACCTTTTGACACA 1320
      M S *

      TGCCACAGTAGAACTGCTCTGTGAACACAGAGAGACCCCTTGTTGGGTCCATGCTAACAAAGACA 1380
      +-----+-----+-----+-----+-----+-----+
      ACGGTGTCATCTTGACAGACACTTGTCTCTCTGGGAACACCCAGGTACGATTGTTCTGT
      AAGTCTGTCTTTCCCTGAACCATGTGGATAACTTTACAGAAAATGGACTGGAGCTCATCTG 1440
      +-----+-----+-----+-----+-----+-----+
      TTTCAGACAGAAAAGGACTTGGTACACCTATTGAAATGTCTTTACCTGACCTCGAGTAGAC

      CAAAAGGCCCTTGTAAAGACTGGTTTCTGCCTAATGACCAACACAGCCAAGATTTTCCTC 1500
      +-----+-----+-----+-----+-----+-----+
      GTTTTCCGGAGACATTTCTGACCAAAAGACGGTTACTGGTTTGTGCGGTTCTAAAAGGAG

      TTGTGATTTCTTTAAAAGAAATGACTATATAATTTATTTCCACTAAAAATATTGTTTCTGC 1560
      +-----+-----+-----+-----+-----+-----+
      AACACTAAAGAAATTTCTTACTGATATATTAAATAAAGGTGATTTTATAACAAAAGACG

      ATTCAATTTTATAGCAACAACAATTGGTAAAACTCAGTGTGATCAATATTTTATATATCAT 1620
      +-----+-----+-----+-----+-----+-----+
      TAAGTAAAAATATCGTTGTTGTTAACCATTTTGGTGGACACTAGTTATAAAAATATAGTA

      GCAAAAATATGTTTAAAAATAAAATGAAAAATTGATTTATATAAAAAAAAATAAAA 1674
      +-----+-----+-----+-----+-----+-----+
      CGTTTTTATACAAAATTTTATTTTACTTTTACATAAAATATTTTTTTTTTTTTTTT

```

FIG. 1E

```

1  CGAGGCCACGGCTTATCCAAGCAAGATCTGGAGGAGCAGTTACGGTCTGTGTCCAGTGT
-----+-----+-----+-----+-----+-----+-----+-----+
71  AGATGAACATCATGACTGTACTCTACCCAGAAATATTGGAATAATGTACAAGTGTCACTAAG
-----+-----+-----+-----+-----+-----+-----+-----+
      M T V L Y P E Y W K M Y K C Q L R
-----+-----+-----+-----+-----+-----+-----+-----+
121  GAAAGGAGGCTGGCAACATAACAGAGAACAGGCCCACTCAACTCAAGGACAGAGAGAC
-----+-----+-----+-----+-----+-----+-----+-----+
      K G G W Q H N R E Q A N L N S R T E E T
-----+-----+-----+-----+-----+-----+-----+-----+
181  TATAAAATTGCTGCAGCACATTATAATACAGAGATCTTGAAAAGTATTGATAATGAGTG
-----+-----+-----+-----+-----+-----+-----+-----+
      I K F A A A H Y N T E I L K S I D N E W
-----+-----+-----+-----+-----+-----+-----+-----+
241  GAGAAAGACTCAATGCATGCCACGGGAGGTGTATAGATGTGGGGAAGGAGTTTGCAGT
-----+-----+-----+-----+-----+-----+-----+-----+
      R K T Q C M P R E V C I D V G K E F G V
-----+-----+-----+-----+-----+-----+-----+-----+
301  CGCGACAAACACCTTCTTTAAACCTCCATGTGTCCGTCTACAGATGTGGGGGGTTCTCG
-----+-----+-----+-----+-----+-----+-----+-----+
      A T N T F F K P P C V S V Y R C G G C C
-----+-----+-----+-----+-----+-----+-----+-----+

```

FIG. 2A

```

361 CAATAGTAGGGGCTGCAGTGCATGAACACACGACGAGCTACCTCAGCAAGACGTTATT
    N S E G L Q C M N T S T S Y L S K T L F
421 TGAAATTACAGTGCCTCTCTCTCAAGGCCCAACACAGTAACAATCAGTTTGGCCAATCA
    E I T V P L S Q G P K P V T I S F A N H
481 CACTTCCTGCCGATGCATGCTAAACTGGATGTTTACAGACAAGTTCATTCCATTATTAG
    T S C R C M S K L D V Y R Q V H S I I R
541 ACGTTCCCTGCCAGCAACACTACCACAGTGTGAGGCAGCGAACAAGACCTGCCCCACCAA
    R S L P A T L P Q C Q A A N K T C P T N
601 TTACATGTGGAATAATCACATCTGCAGATGCCCTGGCTCAGGAAGATTTTATGTTTCCTC
    Y M W N N H I C R C L A Q E D F M F S S
661 GGATGCTGGAGTACTCAACAGATGGATTCCATGACATCTGTGGACCAACAAGGAGCT
    D A G D D S T D G F H D I C G P N K E L

```

FIG. 2B

```

721 GGATGAAGAGACCTGCTCAGTGTGCTGCAGAGCGGGGCTTCGGCCTGCCAGCTGTGGACC
    +-----+-----+-----+-----+-----+-----+
    D E E T C Q C V C R A G L R P A S C G P

781 CCACAAGAAGACTAGACAGAAAACATCATGCCAGTGTGTGTGTAAACAACACTCTTCCCAG
    +-----+-----+-----+-----+-----+-----+
    H K E L D R N S C Q C V C K N K L F P S

841 CCAATGTGGGCCAACCGAGAATTTCATGAAAACACATGCCAGTGTGTATGTAAAGAAC
    +-----+-----+-----+-----+-----+-----+
    Q C G A N R E F D E N T C C Q C V C K R T

901 CTGCCCCAGAAATCAACCCCTAAATCCTGGAAAATGTCCTGTGAATGTACAGAAAGTCC
    +-----+-----+-----+-----+-----+-----+
    C P R N Q P L N P G K C A C E C T E S P

961 ACAGAAATGCTTGTAAAGGAAAGAAAGTTCCACCACCAACATGCAGCTGTTACAGACG
    +-----+-----+-----+-----+-----+-----+
    Q K C L L K G K K F H H Q T C S C Y R R

1021 GCCATGTACGAACCGCCAGAGGCTTGTGAGCCAGGATTTTCATATAGTGAAGAAGTGTG
    +-----+-----+-----+-----+-----+-----+
    P C T N R Q K A C E P G F S Y S E E V C

```

FIG.2C


```

1081 TCGTTGTGTCCTTCATATTGGCAAAGACCACAAATGAGCTAAGATTGTACTGTTTCCA
      +-----+
      R C V P S Y W Q R P Q M S
1141 GTTCATCGATTTCCTATTATGGAAACTGTGTGCCACAGTAGAACTGTCTGTGAACAGA
      +-----+
1201 GAGACCCCTGTGGTGCCATGCTAACAAAGACAAAAGCTGTCTTTCTGGAACCATGTGGA
      +-----+
1261 TAACTTTACAGAAATGGACTGGAGCTCATCTGCAAAAGGCTCTTTGTAAAGACTGGTTTT
      +-----+
1321 CTGCCAATGACCAAAACAGCCAAGATTTTCCCTCTTGTGATTCTTTAAAAAGAAATGACTATA
      +-----+
1381 TAATTTATTCCACTAAAAATATTGTTTCTGCATTCTTTTATAGCAACAACAATTTGGT
      +-----+
1441 AAAACTCAGTGTGATCAATATTTTATATCATGCAAAATATGTTTAAAAATAAAATGAAAA
      +-----+
1501 TTGTATTATAAAAAA
      +-----+

```

FIG. 2D

50

1
Pdgfa .MRTLACLLL LGGYLAAVL AEEAEIPREV IERLARSQIH SIRDQLRLE
Pdgfb MNROWA.LFL SLCCYLRLVS AEGDPIPEEL YEMLSHISR SFDDLQRLH
VegfMNFL SIWHSLALL LY.....LHHAKWSQA
Vegf2MTV LYPEYWKMYK CQ.....LRXGGWQHIN

100

51
Pdgfa IDSVGSEDSL DTSRAHGVH ATKHYPEKRP LPTRKRST.....EEAVP
Pdgfb GDP.GEEDGA ELDLNMTRSH SGOELES....LARGRRSLG SLTIAEPAMI
Vegf APMAE.....GGGQ NHHEVVKFMD .VYQR.....
Vegf2 REQANLNSRT EETIKFAAH YNTEILKSID NEWRK.....

150

101
Pdgfa AVCKTRTVIY EIPRSQVDPT SANFLIWPCC VEVKRCGTCC NTSSVQDPS
Pdgfb AECKTRTEVF EISRLIDRT NANFLWPPC VEVORCSGCC NNRNVQRPT
Vegf SYCHPIETLV DIFQEPDEI ..EYIFKPC VPLMRGGCC NDEGLEQVPT
Vegf2 TQMPREVC I DVGKEFCVAT ..NTFFKPPC VSVYRCGGCC NSEGLQAMNT

200

151
Pdgfa RVHHSVKVA KVEYVRKKPK LKEVQVRLEE HLEQAC.....AT.....
Pdgfb QVQLRPQVR KIEIVRKKPI FKKATVTLED HLACAC....ETVAAARPVT
Vegf EESNITMQIM RIK.PH.QG QHIGEMSFLQ HNKEQRPKK DRARQEKSV
Vegf2 STSYLSKTLF EIT.VPLSQG PKPVTITSFAN HTSQPMSKL DYYRQVHSII

FIG. 3A

201 TSLNPD YREEDTDVR. 250
 Pdgfa TSLNPD YREEDTDVR. DKTALKETLG
 Pdgfb RSPGSGEQR AKTPQTRVTI RTVVRVRPPK GKHKFKHTH
 Vegf RGK GKQKRRK KSRYSWSVY VGARCLMPW SLPGPH
 Vegf2 RRSPLATLPQ CQAANKTPT NYMNNHICR CLAGEDMFMS SDAGDDSTDG 300

251
 Pdgfa
 Pdgfb A CSE RRKHLFVQDP QTCKSCSKNT
 Vegf CGP RAGLRPASOG PHKEL...DR NSCOCVCKNK
 Vegf2 FHDTCGNKE LDEETCCVC 350

301
 Pdgfa
 Pdgfb
 Vegf DSRCKARQ LELNERTCRC DKPRR
 Vegf2 LFPSGGANR EFDENTCOC VCKRTCPRNQ PLNPGKACE CTESPKCLL 398

351
 Pdgfa
 Pdgfb
 Vegf
 Vegf2 KGKKFHHQTC SCYRRPCTNR QKACEPGFSY SEEVCRCPVS YWQRPOMS

FIG. 3B

PERCENTAGE (%) OF AMINO ACID IDENTITIES BETWEEN EACH PAIR OF GENES IS SHOWN IN THE FOLLOWING TABLE			
	PDGF α	PDGF β	VEGF
PDGF α			
PDGF β	48.0		
VEGF	20.7	22.7	
VEGF2	23.5	22.4	30.0

FIG.4

Expression of VEGF2 mRNA in
Human Breast Tumor Cells

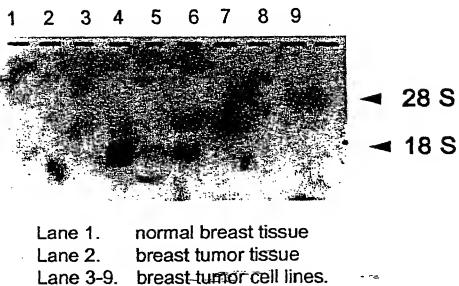
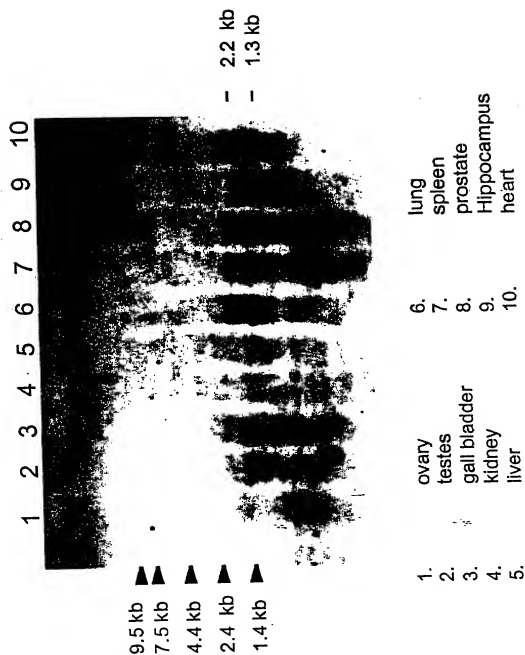
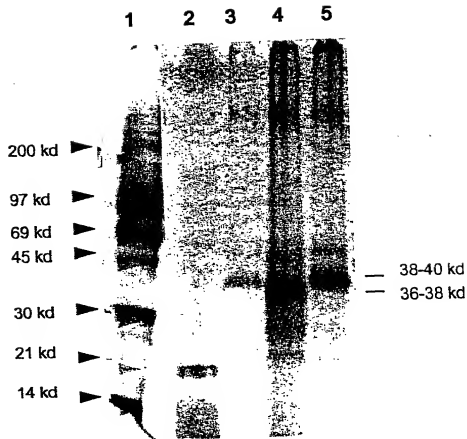


FIG.5



Expression of VEGF2 mRNA in human adult tissues.

FIG.6



Lane 1: 14-C and rainbow M.W. marker
 Lane 2: FGF control
 Lane 3: VEGF2 (M13-reverse & forward primers)
 Lane 4: VEGF2 (M13-reverse & VEGF-F4 primers)
 Lane 5: VEGF2 (M13-reverse & VEGF-F5 primers)

FIG.7

non-reducing gel

M 1 M 2 M

98—

67—

45—

30—

21—

14—

Lane M
Lane 1
Lane 2
vector medium
VEGF2 medium

FIG.8A

reducing gel

M 1 2 M 3 4 M

210—

98—

67—

45—

30—

21—

14—

Lane M:
Lane 1:
Lane 2:
Lane 3:
Lane 4:
Marker
vector Cytoplasm
vector medium
VEGF2 Cytoplasm
VEGF2 medium

FIG.8B

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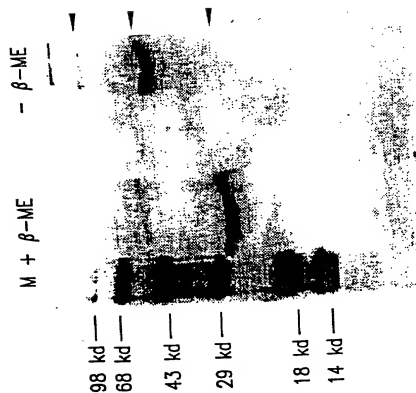
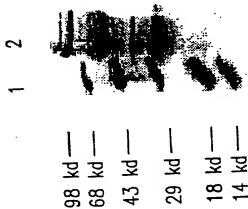


FIG.10



Lane 1: Molecular weight marker
Lane 2: Precipitates containing VEGF2.

FIG.9

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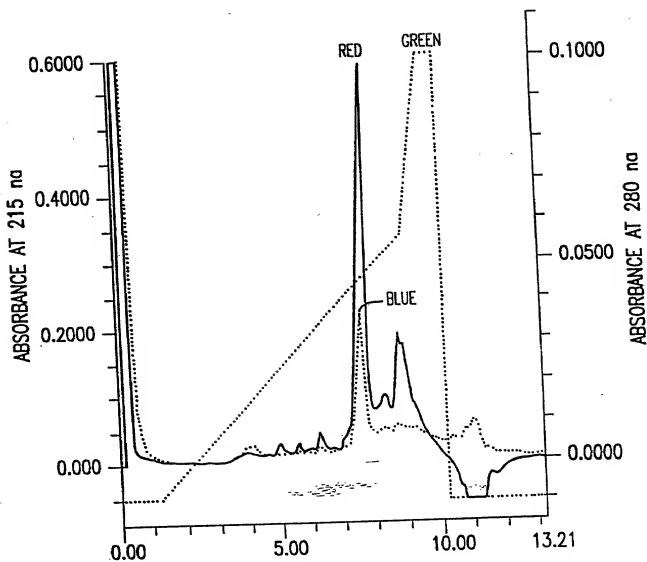


FIG. 11

106080* CH112660

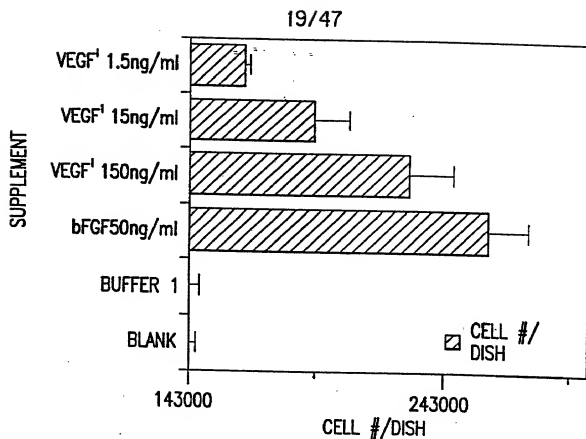


FIG.12

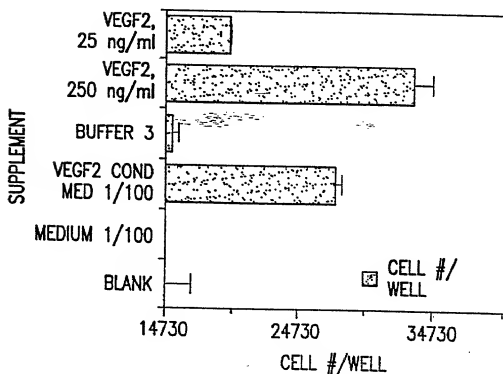


FIG.13

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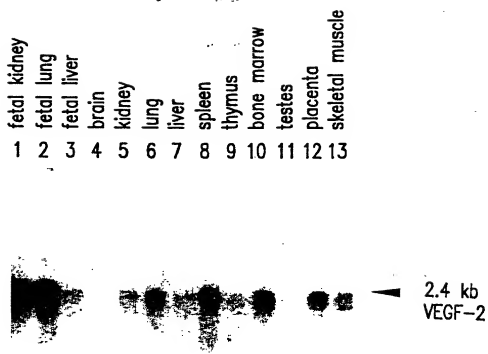
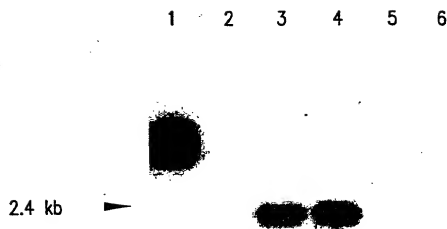


FIG.14A



FIG.14B

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1. Molecular Weight Marker
2. umbelical vein endothelial cells
3. aortic smooth muscle cells
4. Dermal fibroblast

FIG.15

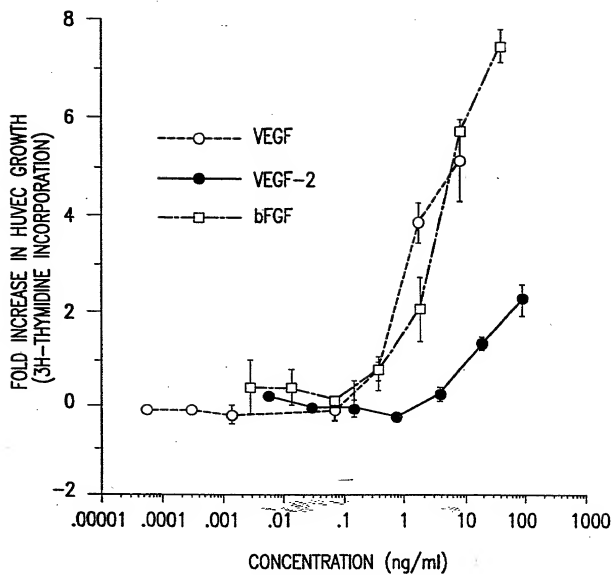


FIG.17

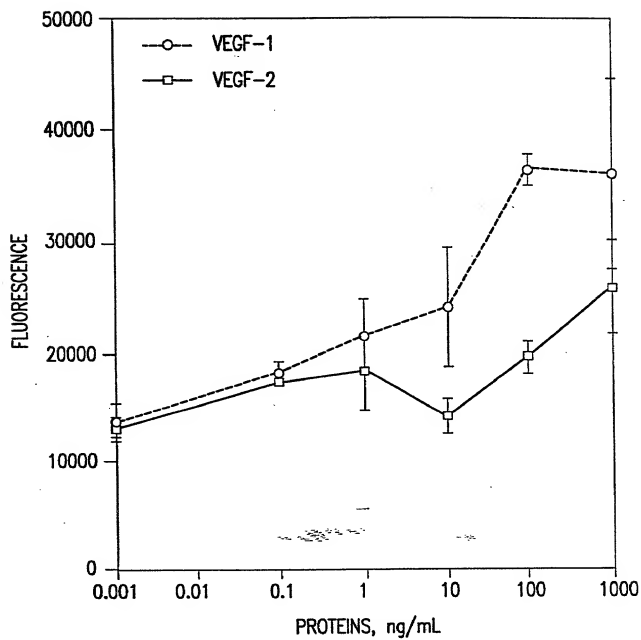


FIG.18

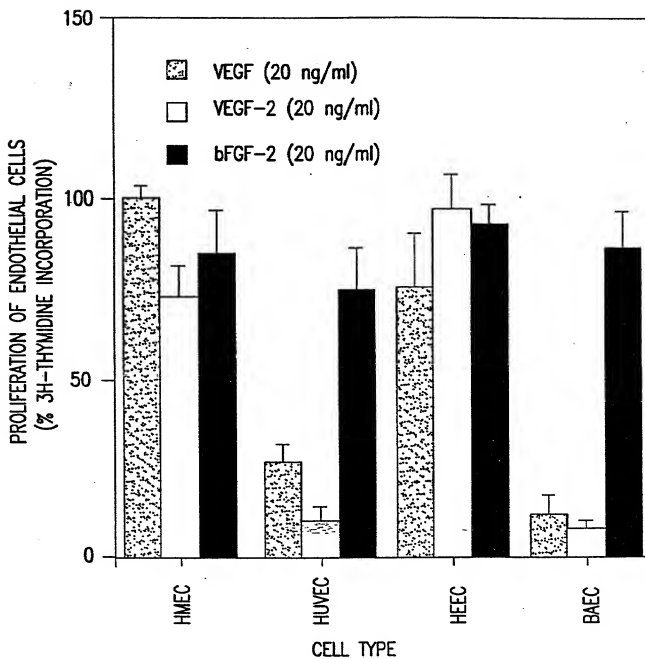


FIG.19

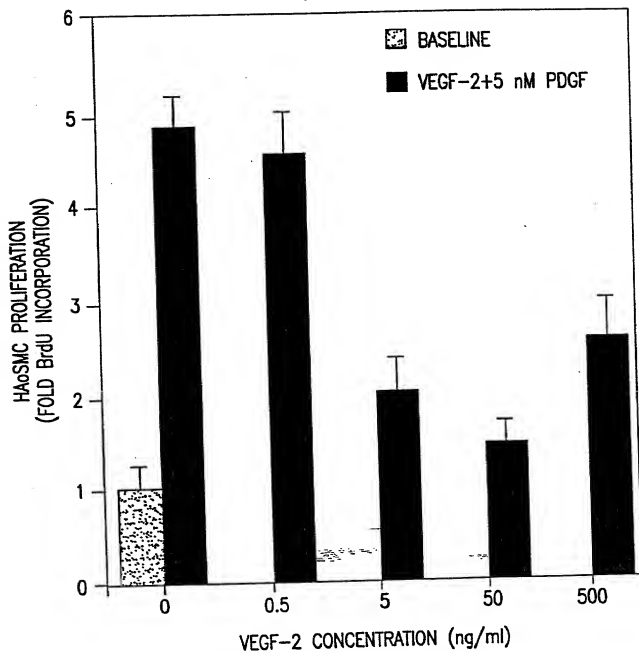


FIG.20A

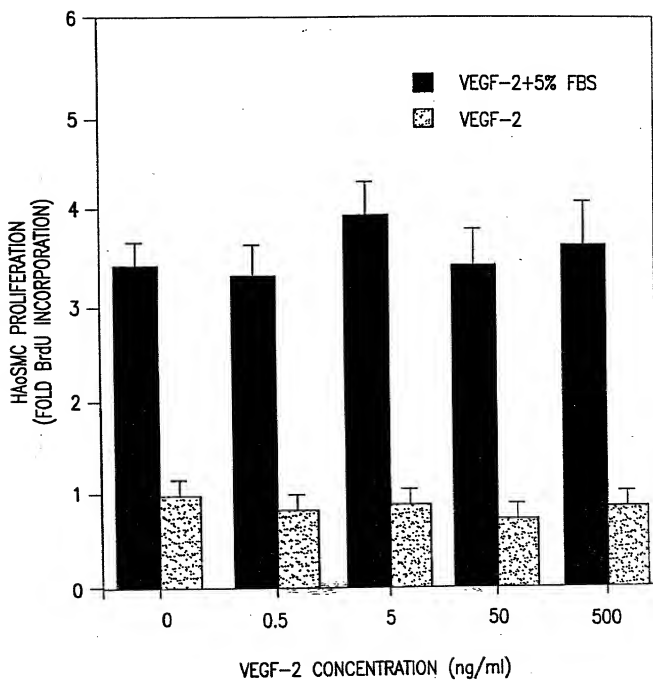


FIG.20B

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HUVEC MIGRATION

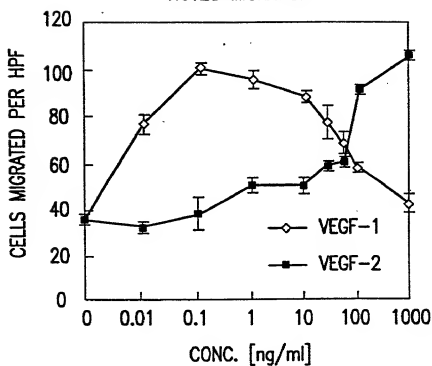


FIG.21A

BMEC MIGRATION

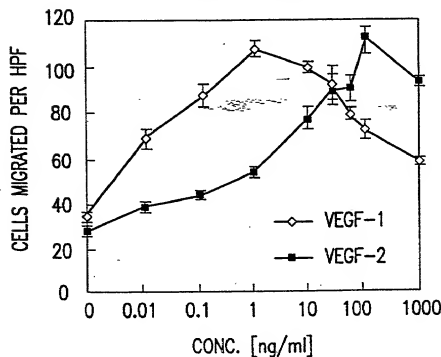


FIG.21B

100000-2112660

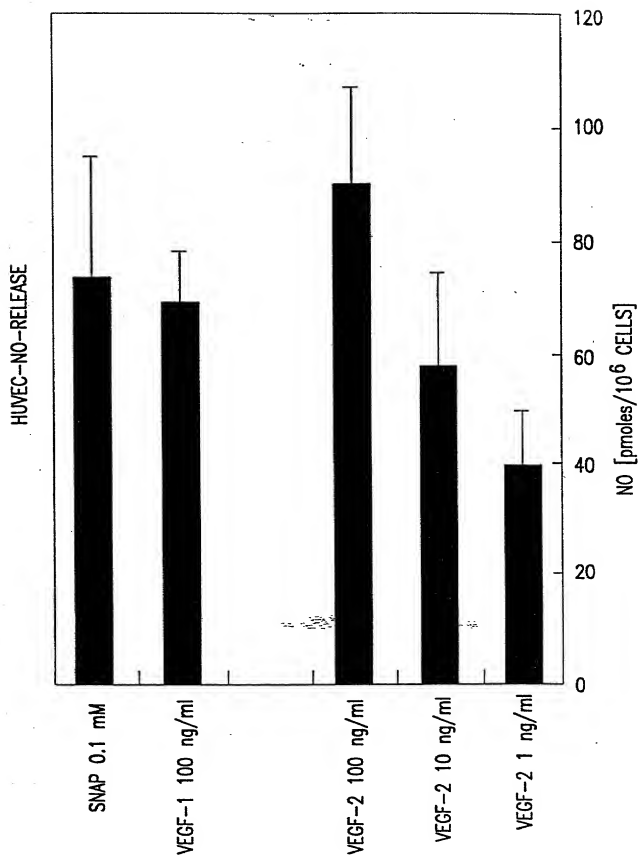


FIG.22

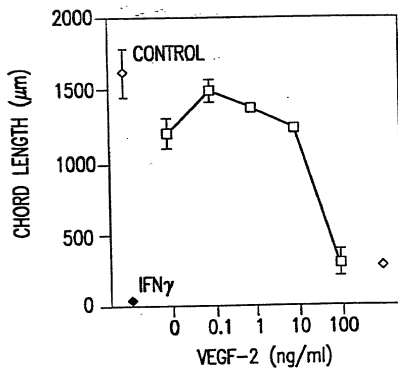


FIG.23

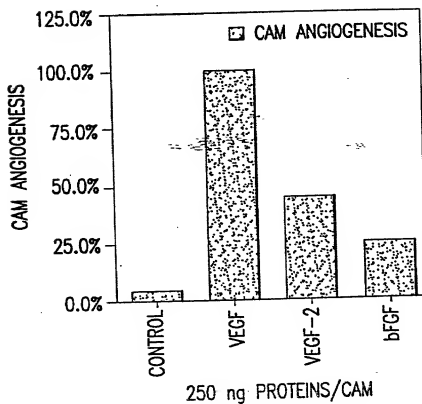


FIG.24

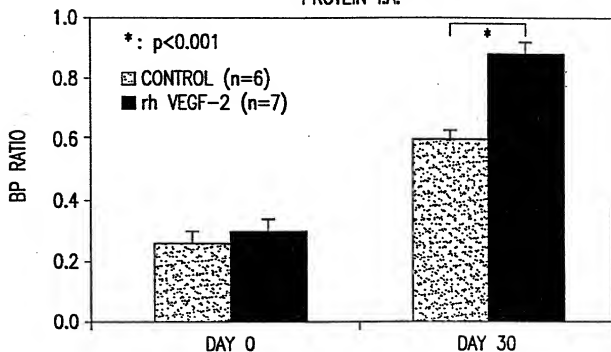
CALF BLOOD PRESSURE RATIO
-PROTEIN I.A.-

FIG.25A

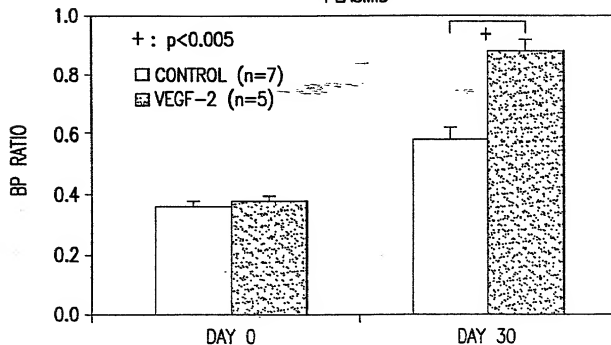
CALF BLOOD PRESSURE RATIO
-PLASMID-

FIG.25B

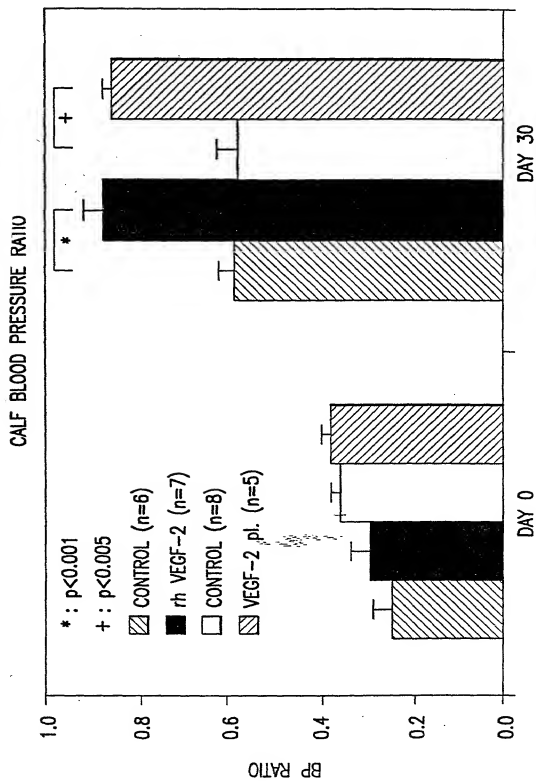


FIG.25C

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LLIAC BLOOD FLOW
-PROTEIN I.A.-

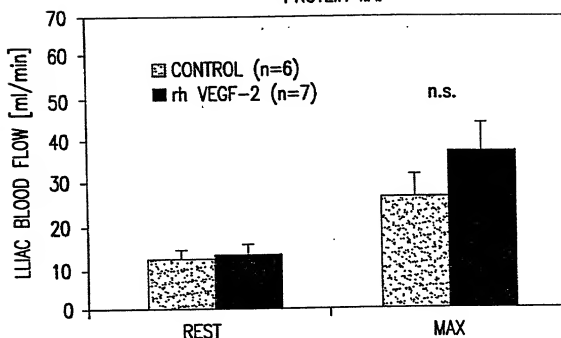


FIG.25D

LLIAC FLOW RESERVE
-PROTEIN I.A.-

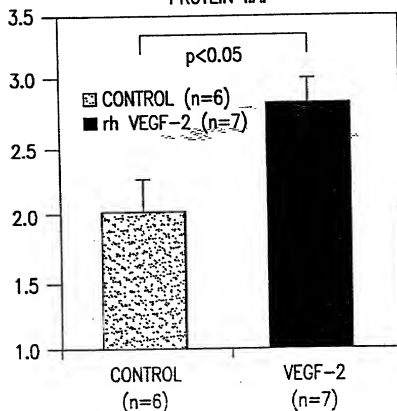


FIG.25E

0902142-080301

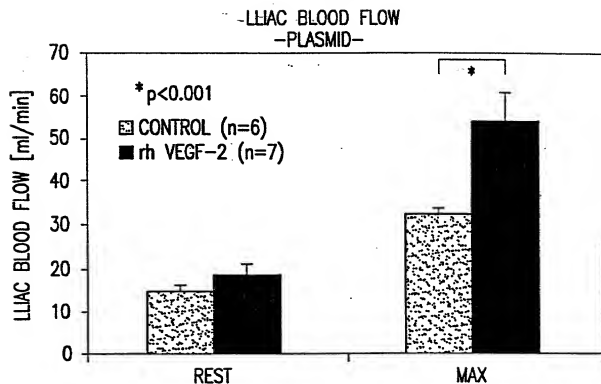


FIG.25F

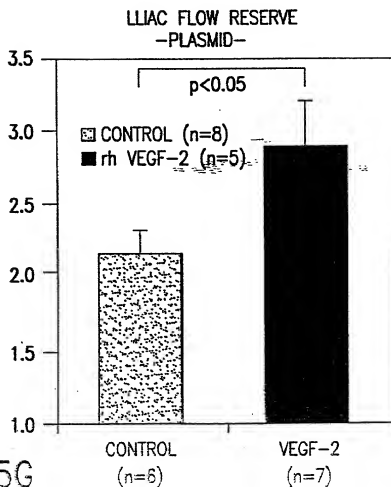


FIG.25G

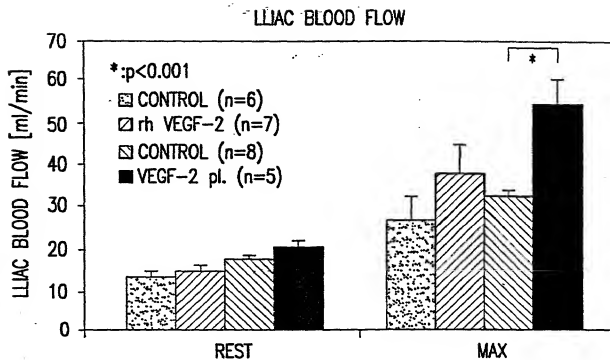


FIG.25H

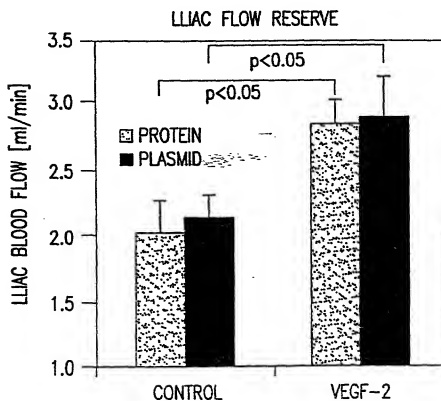


FIG.25I

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ANGIOGRAPHIC SCORE
-PROTEIN I.A.-

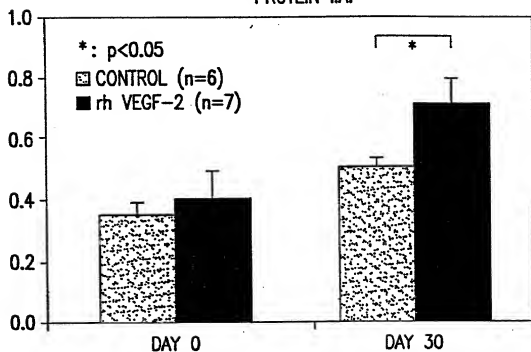


FIG.25J

ANGIOGRAPHIC SCORE
-PLASMID-

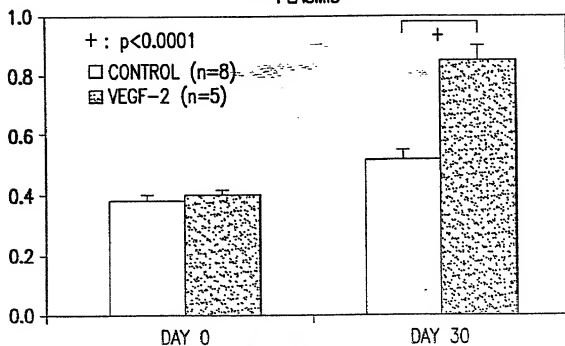


FIG.25K

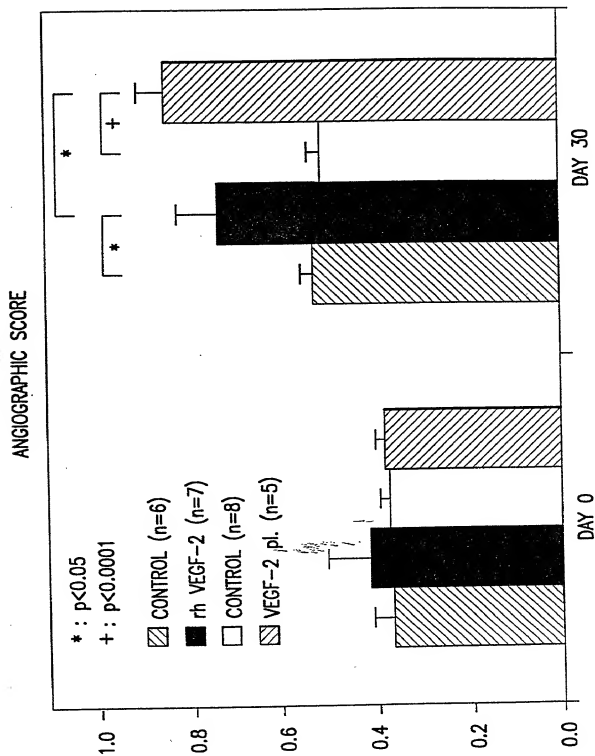
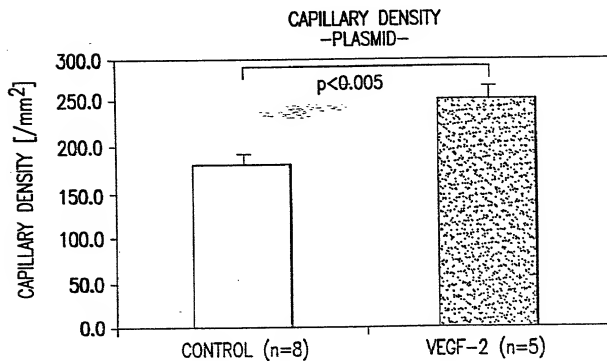
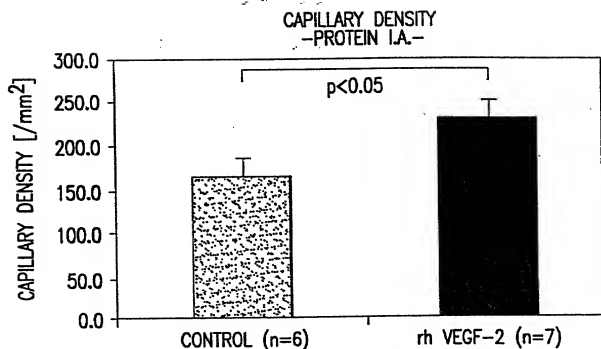


FIG.25L



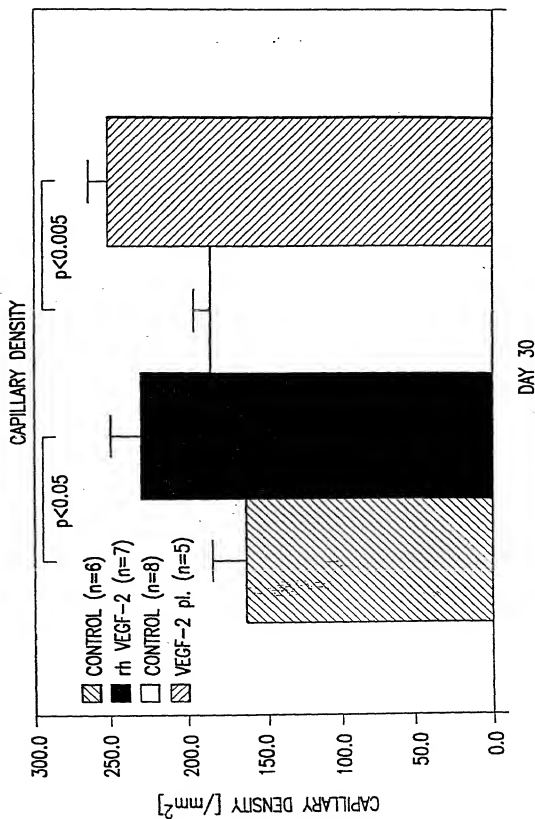


FIG.25 0

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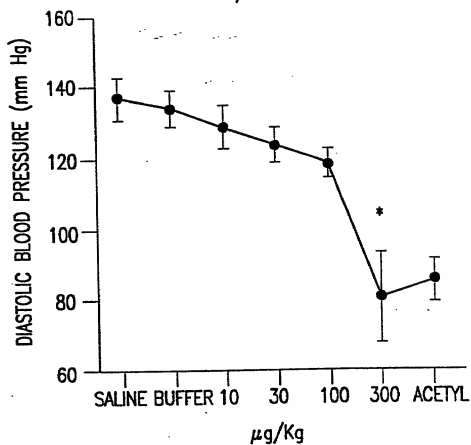


FIG. 26A

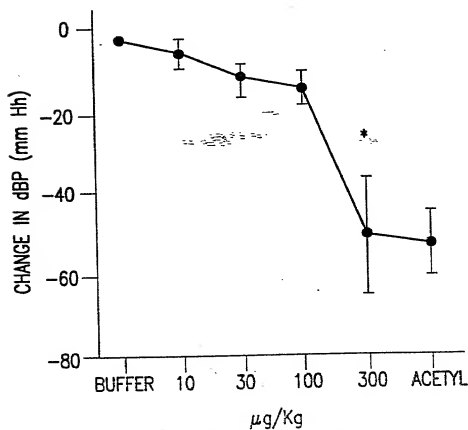


FIG. 26B

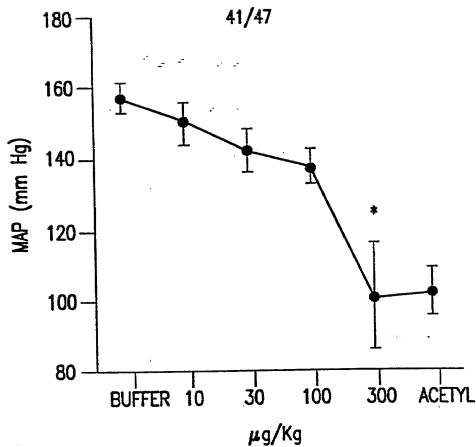


FIG.26C

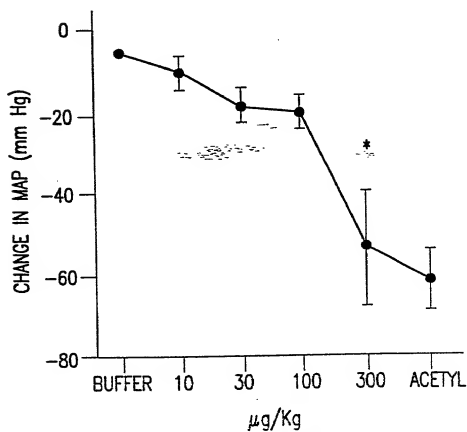


FIG.26D

CHANGE IN DIASTOLIC BLOOD PRESSURE OF SHR RATS GIVEN
INCREASING DOSES OF VEGF-2

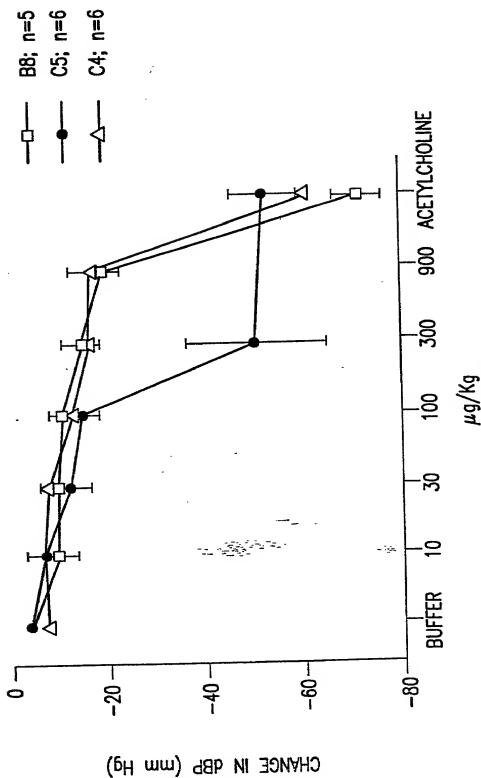


FIG.26E

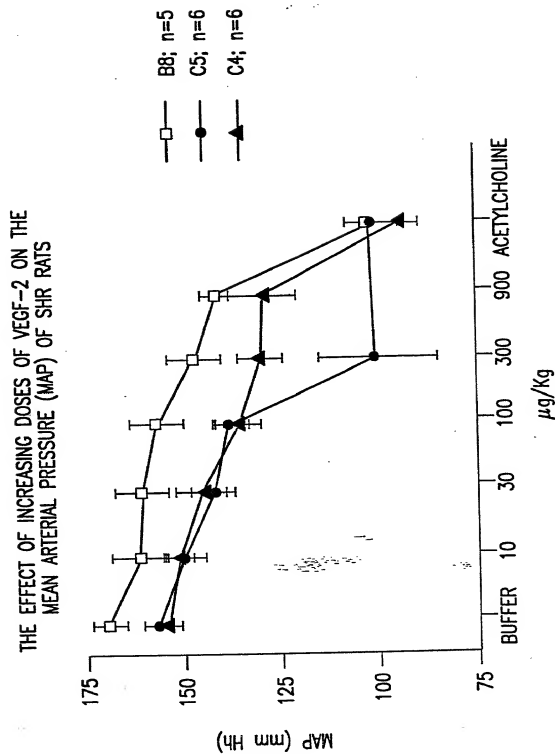


FIG.26F

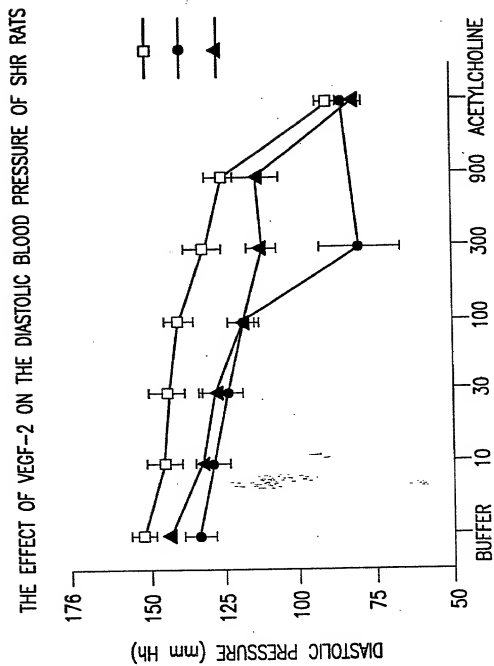


FIG.26G

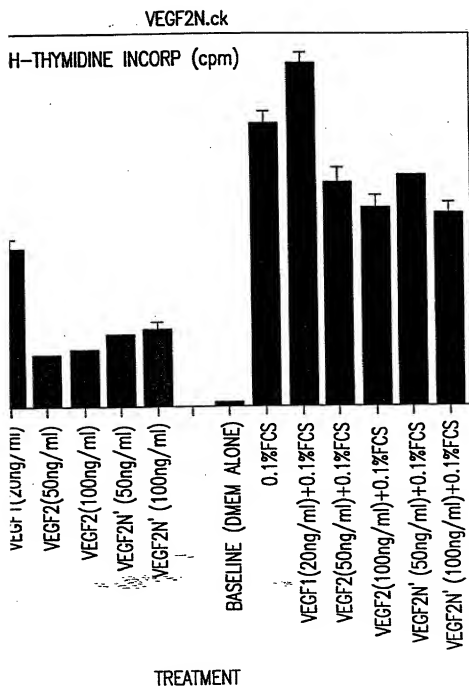


FIG.26G

FIG.27

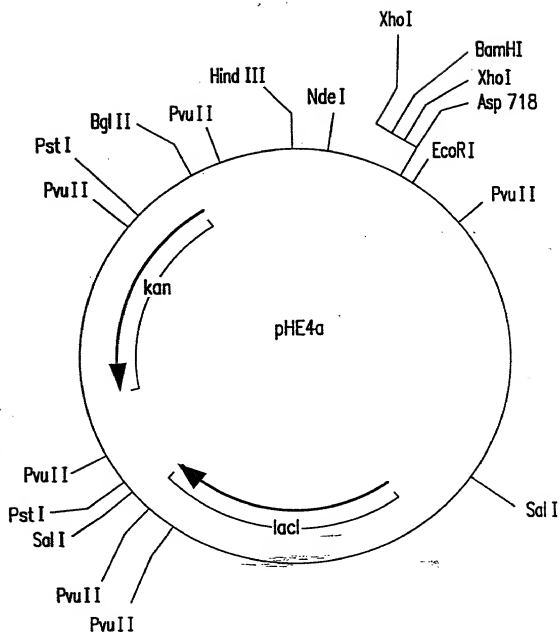


FIG.28

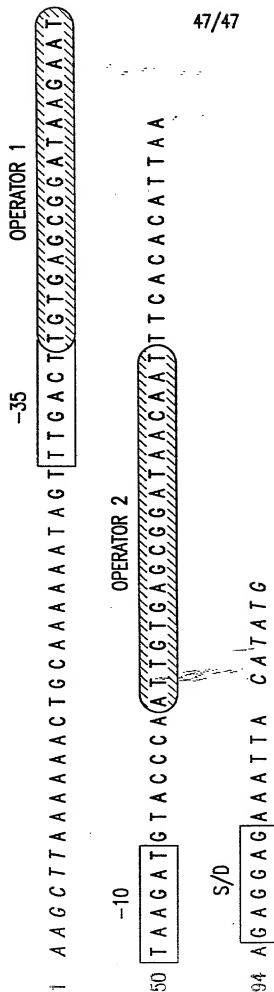


FIG.29

FIG. 31A

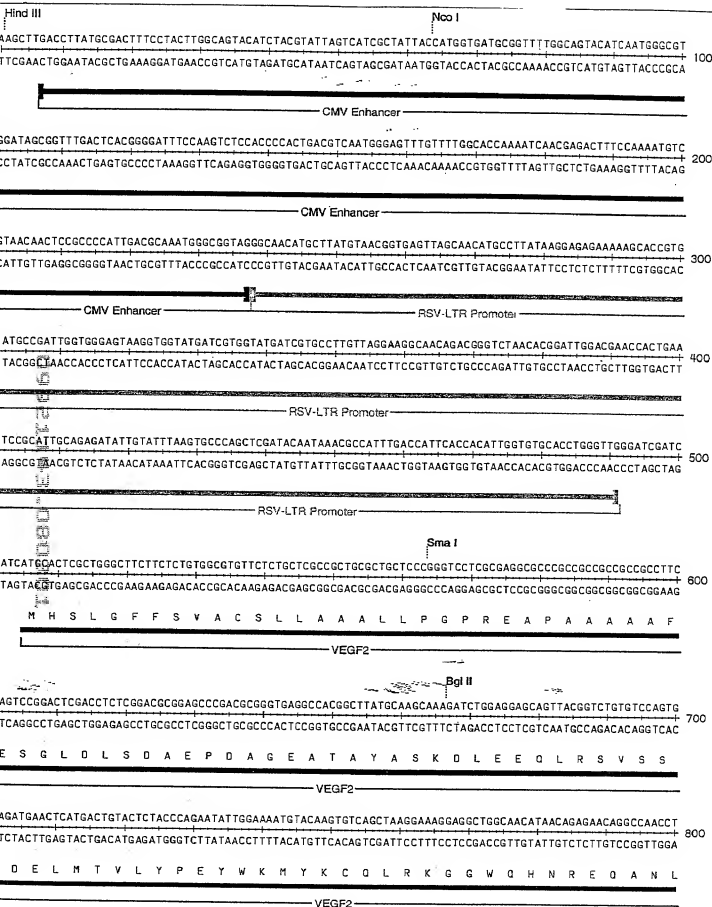


FIG. 31B

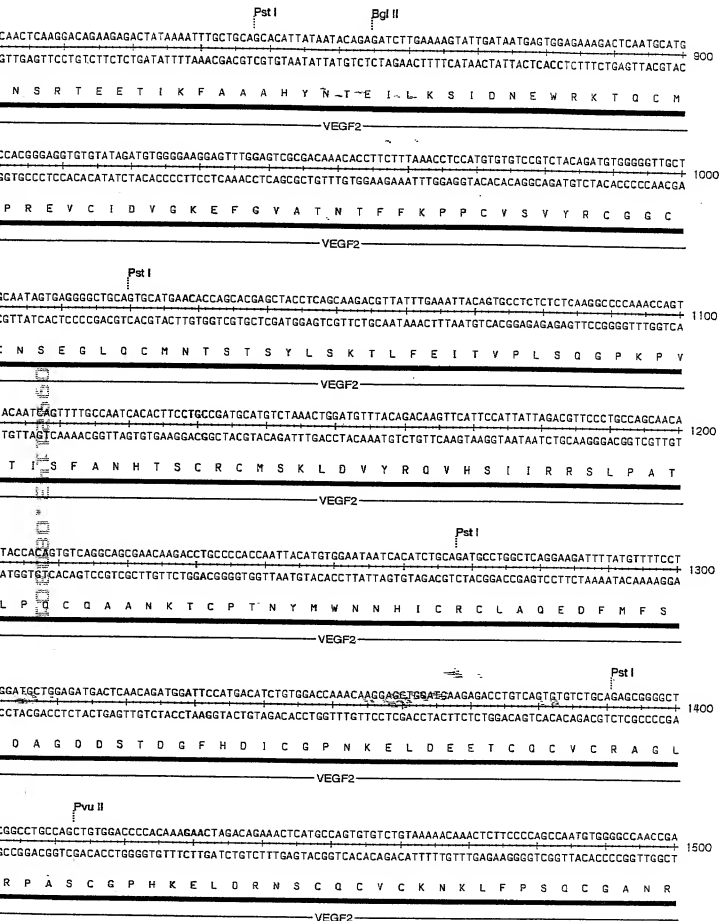
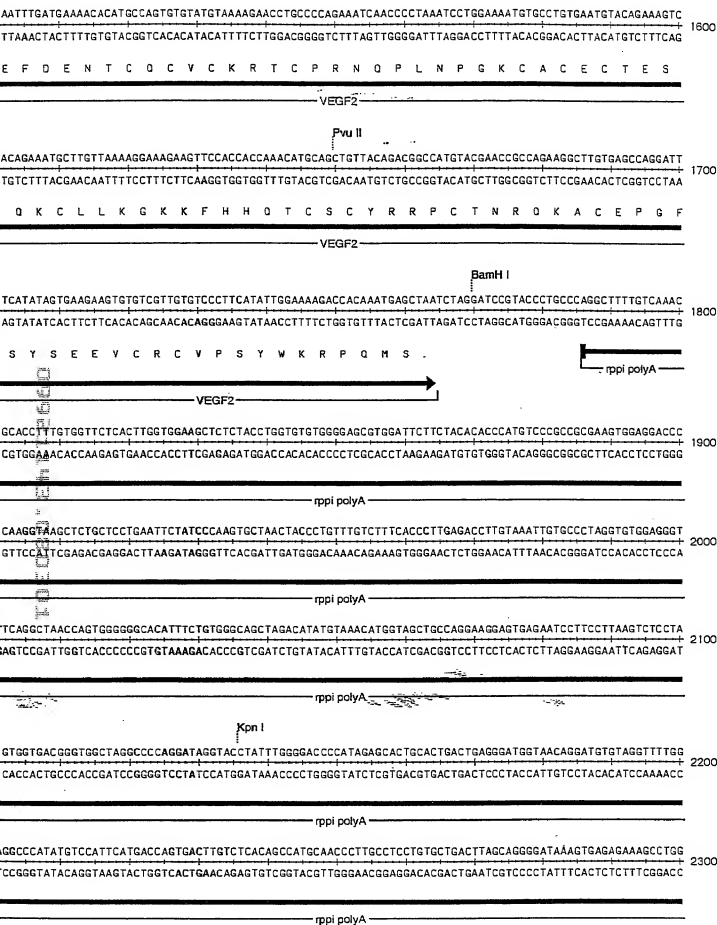
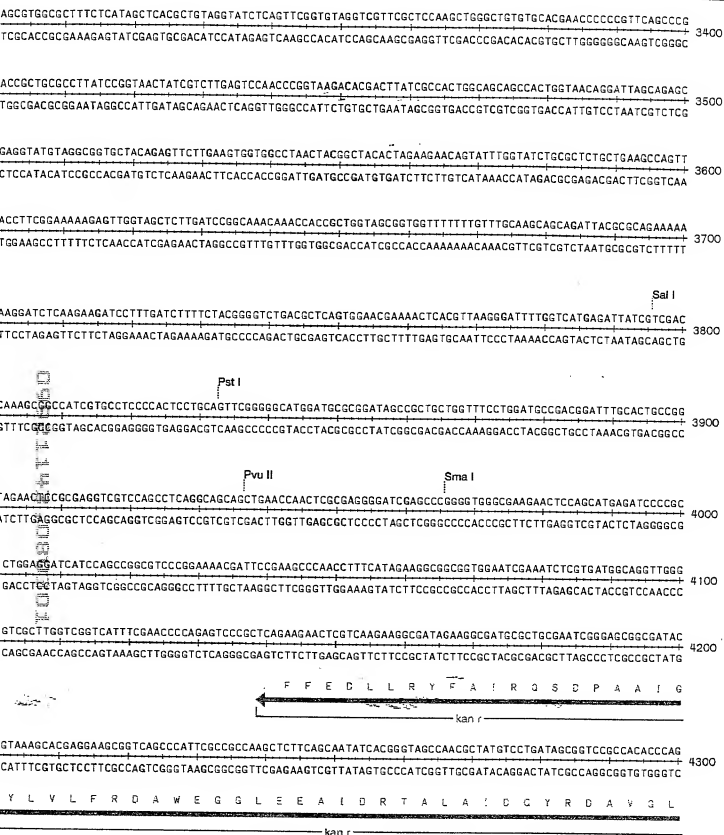


FIG. 31C



GATATCAACAGGGGGTGCCTGAGCTCTCCTTAAGTGGATTGTCTTGTGCTTGTGCTGCTGATGCTCTGCCCTGTGCTGACATGACCTCCCTG
 CGATTAGTCCCCCAGCGAGTCGAGGAGGATTGACCTAACAGGATACACAGAAGACGAAGACACCGACTACGAGACGGGACACGACTGTACTGGAGGAC
 2400
 rppl polyA
 Sma I
 CGAGTGGCACAACCTGGAGCTGGGTGGAGGCCCGGGGCAGGTGACCTTCAGACCTTGGCAC TGGAGTGGCCCGGCAGAGCGCGCATCTGGATCAGT
 GTCAACCGTGTGACCTCGACCCACCTCCGGGCCCCGCTCCACTGGAAGTCTGGAACCGGTGACCTCCACCGGCGCTCTTCGGCCGTAGACCACTAGTCA
 2500
 rppl polyA
 CTGCTGACCAGCATCTGTCTCTCTACCAACTGGGAGAAGTACTGCAACTTAGGCCCAACCACTACCCTGTCCACCCCTCTGCAATGAAATAAACCTTTGAAAG
 CGAGCTGGTGTAGACGAGAGAGATGGTTGACCTCTTGATGACGTTGATCCGGTGGTGTGGGACAGGTGGGAGACGTTACTTATTTGGAAACTTTC
 2600
 rppl polyA
 AGCACTACAAGTTGTGTGATACCTGCGTCACTGTGCATATGTGGTCGGGGGGAACATGAGTGGGCTGGCTGGAGTGGTGGCGCTTAATCTATCTGGCA
 CTGTGATGTTCAACACACATGTACGACGTTACAGTATACACCAACGCCCCCTTGTACTCACCCTGACCGACCTCACCAGCGCCGAAATTAGATAGACGCT
 2700
 rppl polyA
 Pvu II
 Xba I
 CTGTCTGAGCAGTAATCATGTGCTAAGCTGTTTCTCTGTGTAATGTTATCCGCTCAACAATCCACACAACTACGAGCCGGAAGCATAAAGTGAAG
 GACAGTCTGCATTAGTACCAGTATGACAAAGGACACACTTAAACAATAGCGGAGTGTAAAGTGTGTTGATGCTGGCCTTCGTATTTACATTTTC
 2800
 Pvu II
 CTGGGTCCTTAATGAGTGAGCTAACTCACATTAATGCTTGGCTCACTGCGCGCTTTCAGTCTGGGAAACCTGTGCTGCCAGCTGCATTAATGAAT
 GACCCCAACGGATTACTCACTCGATTGAGTGAATTAACGCAACGCGAGTGACGGGCGAAAGGTCAGCCCTTTGGACAGCAGCGTCGACGTAATTACTTA
 2900
 GGCACACGCGCGGGGAGAGCGGTTTGGCTATTGGCGCTCTTCCGCTTCTCGCTCACTGACTGCTGCGCTCGTCTTGGCTGCGGCGAGCGGTA
 CCGGTTGCGCGCCCTCTCCGCCAACGCAATAACCGCGAGAGGCGAGGAGCGAGTGACTGAGCGACGCGAGCGCAAGCGACGCGCTCGCCAT
 3000
 CAGCTACTCAAAAGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAAGCAAGACATGTGAGCAAAAGGCCAGTAAAGGCCAGGAACCGTA
 GTGACGTGAGTTTCGCCATTATGCCAATAGGTGCTTTAGTCCCTATTGGCTCTTCTGTGTAACCTGTTTCCGGTCTTTTCGGCTCCTTGGCAT
 3100
 AAAGCGCGCTGTGTCGGCTTTTTCATAGGCTCGCGCCCTTGACGAGCATCACAATAATCGACGCTCAAGTCAGAGGTGGCGAAACCGCAGGACT
 TTTTCGGCGCAACGACCGCAAAAGGATATCCGAGCGGGGGGACTGCTCGTAGTGTGTTTACGTGCGAGTTCAGTCTCCACCGCTTTGGGCTGCTCTGA
 3200
 TAAAGATACCAAGCGTTTCCCGCTGGAAGCTCCCTCGTGGCTCTCTGTTCCGACCTTGGCGCTTACCGGATACCTGTCCGGCTTTCTCCCTCTGGGA
 ATTTCTATGTTCCGAAAGGGGACCTTCGAGGGAGCACGCGAGAGGACAAGCTGGGACGGCGAATGGCTATGGACAGCGCGCAAGAGGGAAGCCCT
 3300

FIG. 31E



Nco I

4400

-kan r

4500

-kan r:

4600

kan r-

Pyru II

kan r-

Pst I

kan r =

1900

kan r=

BqI II

-kan r

FIG. 31 G

Pvu II

AAGAAAGCCATCCAGTTTACTTTGCAGGGCTTCCCAACCTTACCAGAGGGGCGCCCACTGGCAATTCCGGTTCGCTTGTGTCATATAAACCCGCCAGT 5100
TTCTTTCCGTTAGGTCAAATGAAACGTCCCGAAGGGTTGGAATGGTCTCCCGCGGGGTCGACCGTTAAGGCCAAGCGAACGACAGGTATTTTGGCGGGTCA

CTAGCTATCGCCATGTAAGCCCACTGCAAGCTACCTGCTTCTCTTTGCGCTTGGCTTTTCCCTTGTCAGATAGCCAGTAGCTGACATTCATCCGGGG 5200
GATCGATAGCGGTACATTCGGGTGACGTTTCGATGGACGAAAGAGAAACCGCAACGCAAAAGGGAACAGGTCTATCGGGTCATCGACTGTAAGTAGGCCCC

TCAGCACCGTTTCTGCGGACTGGCTTTCTACGTGTTCCGCTTCCTTTAGCAGCCCTTGCGCCCTGAGTGCTTGCGGCAGCGTG 5283
AGTGTGGCAAGACGCTGACCGAAAGATGCACAAGCGAAGGAAATCGTCGGGAACGCGGGACTCACGAACGCCGTCGCAC

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